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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
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10/709,968

06/09/2004

Rong Huang

3967

36669

7590

09/07/2005

RONG HUANG

9016-102 CLIFF CAMERON DRIVE

CHARLOTTE, NC 28269

EXAMINER

HUGHES, JAMES P

ART UNIT

PAPER NUMBER

2883

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                    |  |
|------------------------------|--------------------------------------|------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/709,968 | <b>Applicant(s)</b><br>HUANG, RONG |  |
|                              | <b>Examiner</b><br>James P. Hughes   | <b>Art Unit</b><br>2883            |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2004.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6-9-04</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 1 and 5 are objected to because they recite a “package box” wherein the term “box” lacks antecedent basis in the claims and thus it is unclear as to exactly what applicant is attempting to claim. Appropriate action is required.
2. Claims 2 and 8 are objected to because they do not clearly identify what is claimed. They contain recitations such as “one or more than” (See claim 2, ll. 2; claim 8, ll. 3). The claims are unclear as to what is being claimed. Appropriate action is required.
3. Claims 4 and 6 are objected to for minor informalities. The claims recite that the packages are hermetically “sealed”. It is assumed that applicant intended to claim the packages as being – sealed –. Appropriate action is required.
4. Claim 10 is objected to because its recitation to “high frequency” is unclear as to what exactly applicant is attempting to claim. How high is “high frequency”? Appropriate action is required.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 1-10 are rejected under 35 U.S.C. 101 because the claims contain recitations to two different statutory classes of invention. Each claim must be drawn to ONE statutory class of

Art Unit: 2883

invention. Thus, in the instant application, each claim must be drawn to a package or a method of packaging.

***Claim Rejections - 35 USC § 102 and 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claims 1-5 and 7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shimaoka et al. (5,195,155). First, it is noted that the claims have been interpreted only to the degree possible in light of the 35 U.S.C 101 rejections and claim objections discussed above.

Shimaoka et al. (5,195,155), herein after referred to as "Shimaoka" teaches a package and method of packaging optoelectronic device comprising: a rectangular dual in-line package body (9) – which may be hermetically sealed – with a plurality of electronic leads extending from the bottom of the package. Said package comprising four sidewalls, a thermal electrical cooler –

Art Unit: 2883

TEC – (10) attached on one of the sidewalls wherein a side of a platform – wherein said platform has a photo diode (8) and a laser diode (3) – is attached to the top of the TEC (10). Additionally, the package body (9) has an optical connector (e.g. 19) connected to one of its sidewalls. (See e.g. Col. 7, ll. 20-35; Col. 11, ll. 60 – Col. 12, ll. 30; Col. 21, ll. 10-55; and Figs. 20-21)

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimaoka et al. (5,195,155). Regarding claims 6, 8, and 9; Shimaoka does not explicitly teach a butterfly packaging type – and therefore the top and bottom lids being free of connectors, leads, and mounting tabs. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the cooling and/or alignment functions of Shimaoka in such a butterfly package because this would allow the device to be used in a wide variety of opto-electronic device systems.

Regarding claim 10; Shimaoka does not explicitly teach an RF connector on a sidewall of the package (9). However, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide an RF input/output connection in the device of Shimaoka because this would provide an efficient means for sending or receiving electronic signals to the opto-electronic devices.

Art Unit: 2883

*Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kluitmans et al. (5,065,226) teaches a laser diode module with two dissimilar metals (CP, CB) forming a thermo-electric cooler which is mounted to the sidewalls of the package (e.g. SW). (see Fig. 2). Fukuda et al. (2003/0174976) teaches an optical coupling apparatus with TEC coolers under an opto-electronic device. (See Figs 1-2) Eales et al. (4,615,031) teaches an injection laser package wherein parts of the device are mounted to the package sidewalls. (See e.g. 7)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James P. Hughes whose telephone number is 571-272-2474. The examiner can normally be reached on Monday - Friday 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James P. Hughes  
Patent Examiner  
Art Unit



Frank G. Font  
Supervisory Patent Examiner  
Technology Center 2800